

Federal Aid in Wildlife Restoration Project №: W-15-R**Title of Job:** 2014 April Rural Mail Carrier Survey

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2 May 2014

The 2014 April Rural Mail Carrier Survey was conducted 1-4 April 2014. We received 465 cards by 25 April 2014, of which 448 contained complete information and were used in the following summaries (Tables 1 & 2). Rural carriers made observations while traveling 183,186 miles of rural roads in 88 of Nebraska's 93 counties.

Caveats. Conditions reported by mail carriers during the survey period during the 2014 Rural Mail Carrier Survey included rain, wind, and snow in various parts of the state, which may have affected the results. As such, interpretation of results should be done with caution. Further, interpretation of the percent change from the previous year's indices is only meaningful in relation to the indices themselves. That is, when an index value is low, insignificant changes in the index may translate into large percent changes, but result in no observable difference in abundance in the region. For example, an increase in a species index value from 0.01 animals observed per 100 miles to 0.02 animals observed per 100 miles is a 100% increase, but would not likely be a noticeable increase to hunters afield. Finally, the survey methodology does not allow us to estimate population size, but only trends in an index of relative abundance through time. At a statewide scale, these indices are correlated with annual harvest, and are, therefore, useful for forecasting conditions hunters may encounter in the fall, particularly when combined with results from other annual surveys.

Interpretation. Given the within and among year variation in survey indices, a useful method to determine whether any annual changes are significant is to compare the Confidence Intervals (CIs) to determine whether they overlap. If they overlap, the indices are not significantly different. Using this criteria, the regional and statewide indices for pheasants for 2014 (Table 3) were not significantly different from the 2013 indices. Likewise, the statewide and regional indices for northern bobwhites (Table 4), cottontails (Table 5), and wild turkey (Table 6) for 2014 were not significantly different than the 2013 indices. Further, in most cases, the 2014 estimates were within the CIs for the 2013 estimates.

Take-Home Message. Although the results given above suggest a possible trajectory for the annual indices, the indices themselves are not significantly different between years.

TABLE 1. Raw counts of pheasants, prairie grouse, wild turkey, cottontails, and jackrabbits from the 2014 April Rural Mail Carrier Survey, by pheasant management region (Figure 1).

Region	Carriers	Miles	Pheasants	Grouse	Turkey	Cottontail	Jackrabbit
Central	60	24,215	97	171	917	78	3
Northeast	112	47,804	273	48	1,736	238	2
Panhandle	49	18,172	208	25	192	44	16
Sandhills	42	17,261	91	241	1,006	35	6
Southeast	128	52,633	156	29	1,546	166	1
Southwest	57	23,101	231	46	1,737	107	10
Statewide	448	183,186	1,056	560	7,134	668	38

TABLE 2. Raw bobwhite counts from the 2014 April Rural Mail Carrier Survey, by bobwhite management zones (Figure 2).

Region	Carriers	Miles	Bobwhites
East Central	71	28,187	8
North Central	51	22,110	45
Northeast	99	44,250	29
Republican	23	10,347	5
Southeast	55	22,100	16
West Platte	99	36,960	2
Not Quail Range (NQR)	50	19,232	0
Statewide	448	193,186	105

Results. Continuing drought and abnormally dry conditions across Nebraska continue to negatively affect wildlife populations. However, conditions during the survey period, including rain and snow in parts of the state, may have also affected wildlife observations. Statewide indices for pheasant and wild turkey were lower in 2014 compared to 2013. Regional indices for these two species were mixed. For pheasants, indices were higher compared to 2013 for the Central, Northeast, and Southeast regions, but lower elsewhere (Table 3, Figure 3). For wild turkey, indices were higher compared to 2013 in the Northeast, and lower in all other regions (Table 6, Figure 6). Statewide indices were higher for cottontail compared to 2013 and were similar to 2013 for bobwhite. Regional indices were also mixed for these species. For cottontail, regional indices were higher in the Central, Northeast, Sandhills, and Southeast regions compared to 2013, and were lower elsewhere (Table 5, Figure 5). For bobwhites, indices were higher in the East Central, North Central, Northeast, Republican, and Southeast regions, but were lower in the West Platte and outside the quail range (Table 4, Figure 4). In 2014, 64 of the 448 usable cards returned contained no observations of any of the wildlife species. Zero counts by species are provided in Table 7.

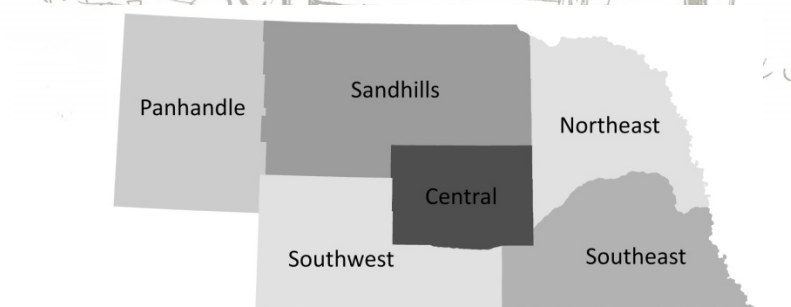
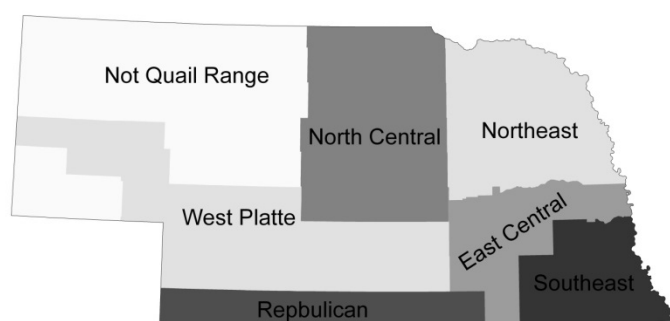
FIGURE 1. Pheasant management regions.**FIGURE 2.** Bobwhite management areas.

TABLE 3. Pheasant indices from the 2014 April Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean pheasants per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2013	Mean 2009-2013	Mean 2002-2013	Mean 1992-2013
Central	0.40 (0.26-0.54)	11	-55	-63	-71
Northeast	0.57 (0.42-0.72)	39	-31	-57	-65
Panhandle	1.14 (0.77-1.52)	-54	-53	-50	-46
Sandhills	0.53 (0.33-0.72)	-41	-70	-72	-73
Southeast	0.30 (0.22-0.37)	7	-49	-69	-73
Southwest	1.00 (0.61-1.39)	-36	-67	-65	-62
Statewide	0.60 (0.52-0.68)	-25	-53	-60	-63

FIGURE 3. Regional and statewide time series (1979-2014) of pheasant population indices from the April Rural Mail Carrier Survey by pheasant management region (Figure 2).

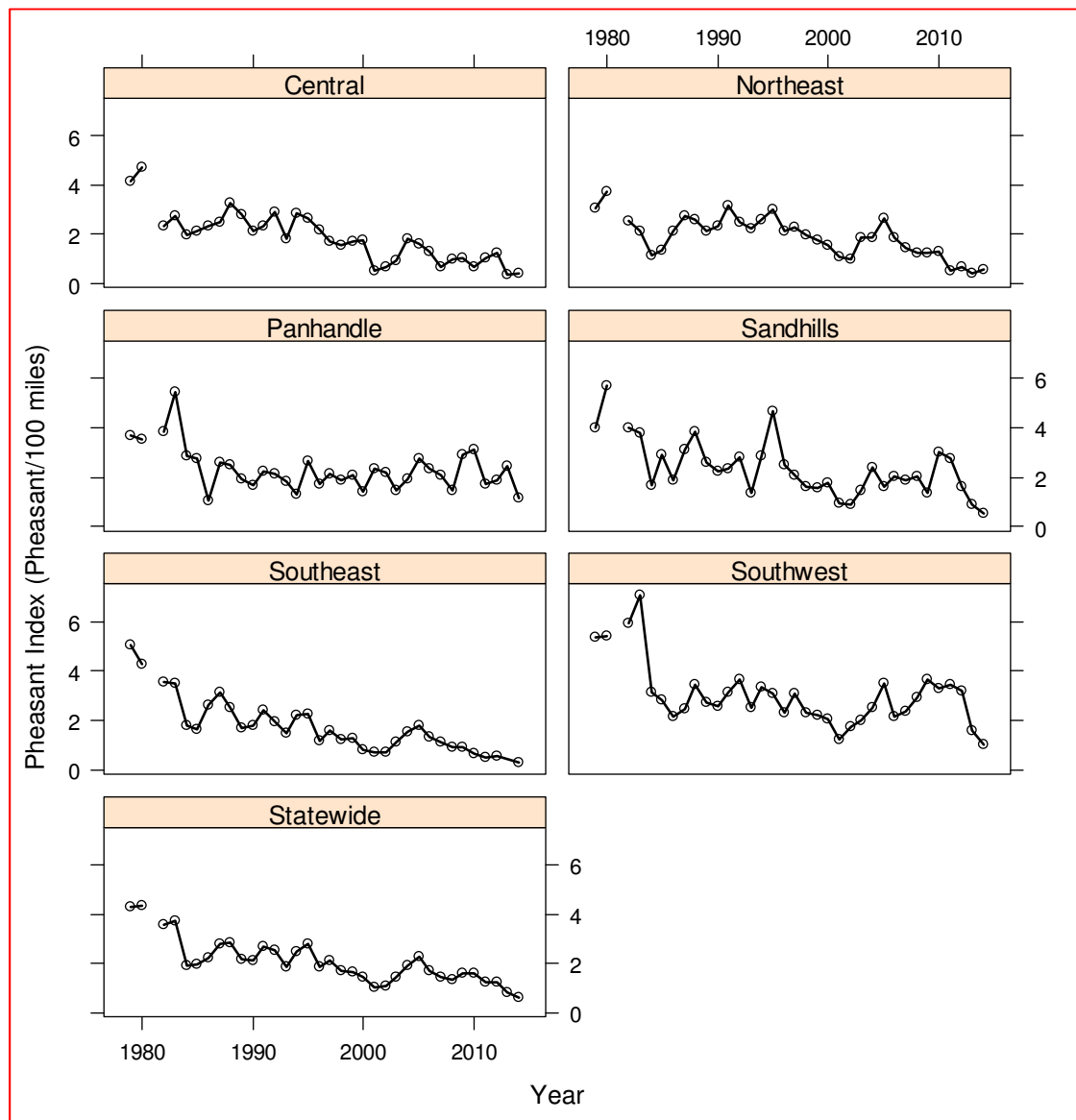


TABLE 4. Northern bobwhite indices from the 2014 April Rural Mail Carrier Survey by bobwhite management zone (Figure 2). Carrier means are weighted by miles traveled per carrier.

Region	Mean bobwhites per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2013	Mean 2007-2013	Mean 2002-2013	Mean 1992-2013
East Central	0.03 (0.00-0.08)	50	-40	-67	-72
North Central	0.20 (0.07-0.34)	67	52	7	15
Northeast	0.07 (0.00-0.16)	17	46	-17	-26
Republican	0.05 (0.00-0.10)	67	-60	-72	-74
Southeast	0.07 (0.03-0.12)	17	-35	-49	-64
West Platte	0.01 (0.00-0.02)	-75	-88	-86	-90
Not in range	0.00 (NA)	-100	-100	-100	-100
Statewide	0.05 (0.02-0.08)	0	-34	-54	-61

FIGURE 4. Regional and statewide time series (1979-2013) of bobwhite population indices from the April Rural Mail carrier Survey by bobwhite management region (Figure 2).

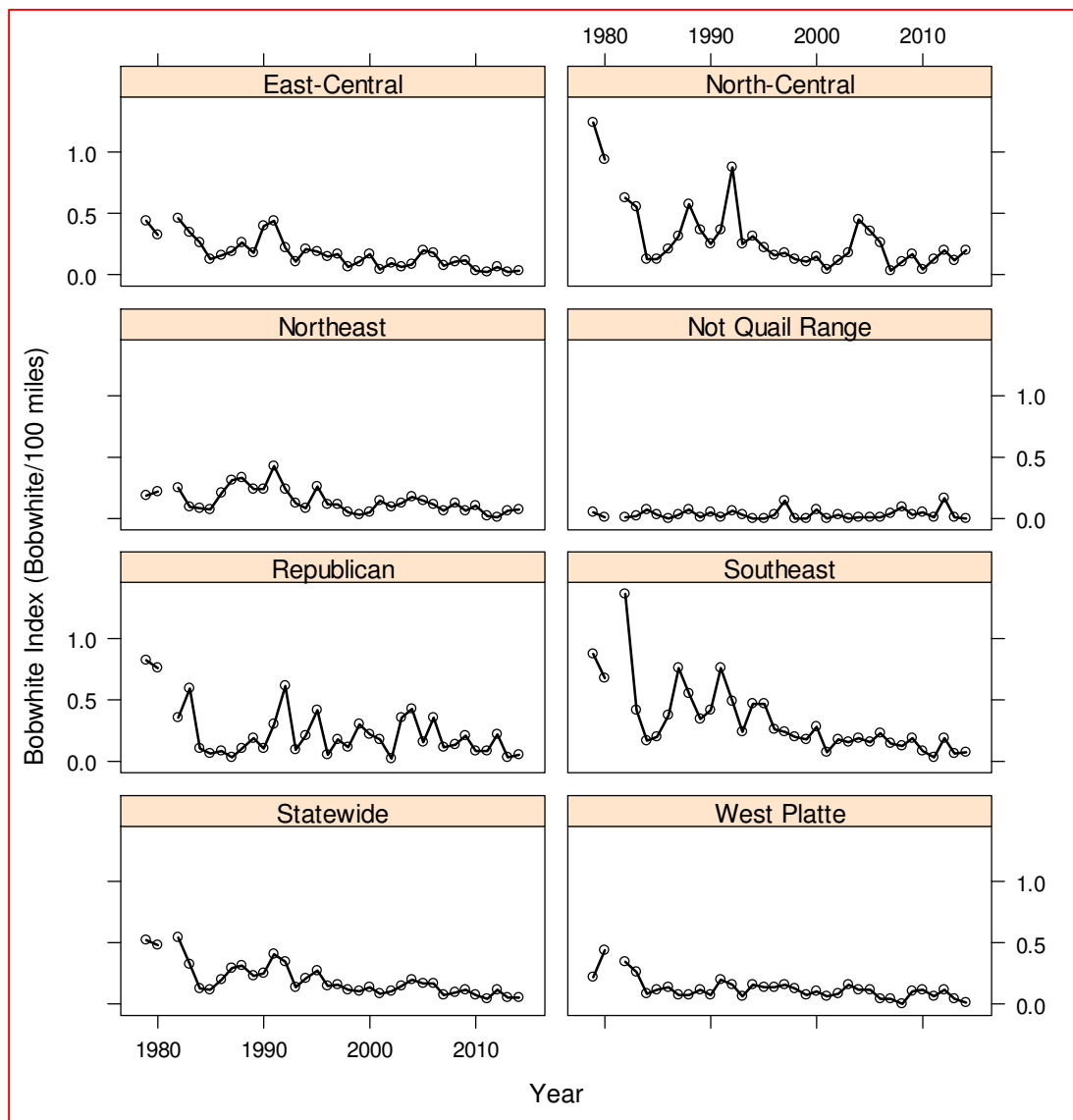


TABLE 5. Cottontail indices from the 2014 April Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean cottontails per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2013	Mean 2007-2013	Mean 2002-2013	Mean 1992-2013
Central	0.32 (0.19-0.45)	10	-43	-54	-50
Northeast	0.50 (0.33-0.67)	9	-15	-29	-14
Panhandle	0.24 (0.05-0.44)	-11	-37	-40	-18
Sandhills	0.20 (0.11-0.29)	67	4	-28	-17
Southeast	0.32 (0.24-0.39)	7	-20	-48	-48
Southwest	0.46 (0.21-0.72)	-2	-11	-19	-10
Statewide	0.38 (0.32-0.44)	6	-21	-36	-29

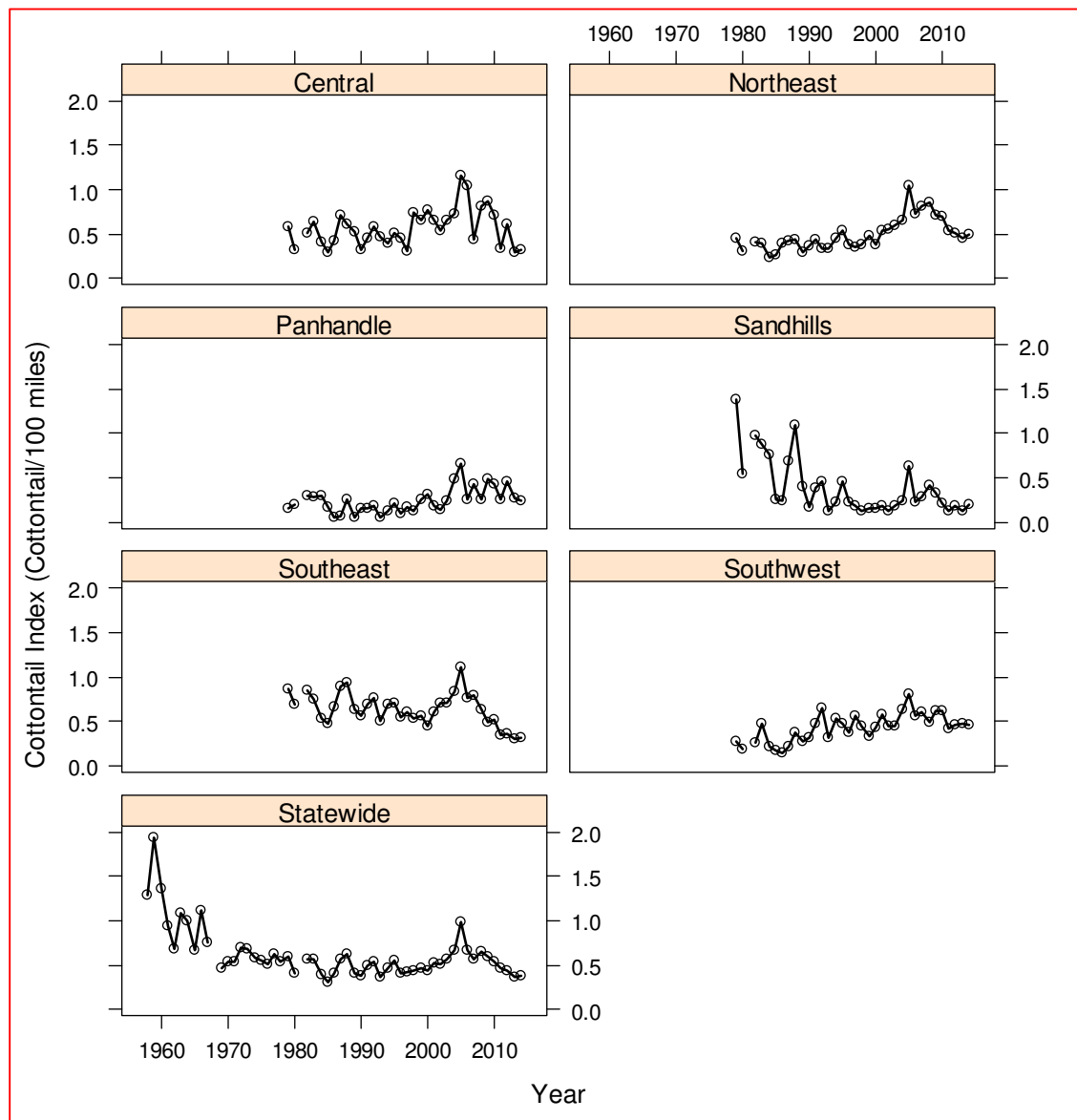
FIGURE 5. Regional and statewide time series (1958-2014) of cottontail population indices from the April Rural Mail Carrier Survey by pheasant management region (Figure 1).

TABLE 6. Wild turkey indices from the 2014 April Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean Wild Turkeys per 100 miles & 90% Confidence Limits	Percent Difference from:		
		2013	Mean 2007-2013	Mean 2003-2013
Central	3.79 (2.20-5.37)	-22	-61	-52
Northeast	3.63 (2.77-4.50)	11	32	45
Panhandle	1.06 (0.25-1.86)	-37	-50	-32
Sandhills	5.83 (3.96-7.70)	-32	-56	-45
Southeast	2.94 (2.17-3.70)	-9	-17	-13
Southwest	7.52 (3.31-11.7)	-22	-47	-29
Statewide	4.10 (3.41-4.79)	-15	-34	-19

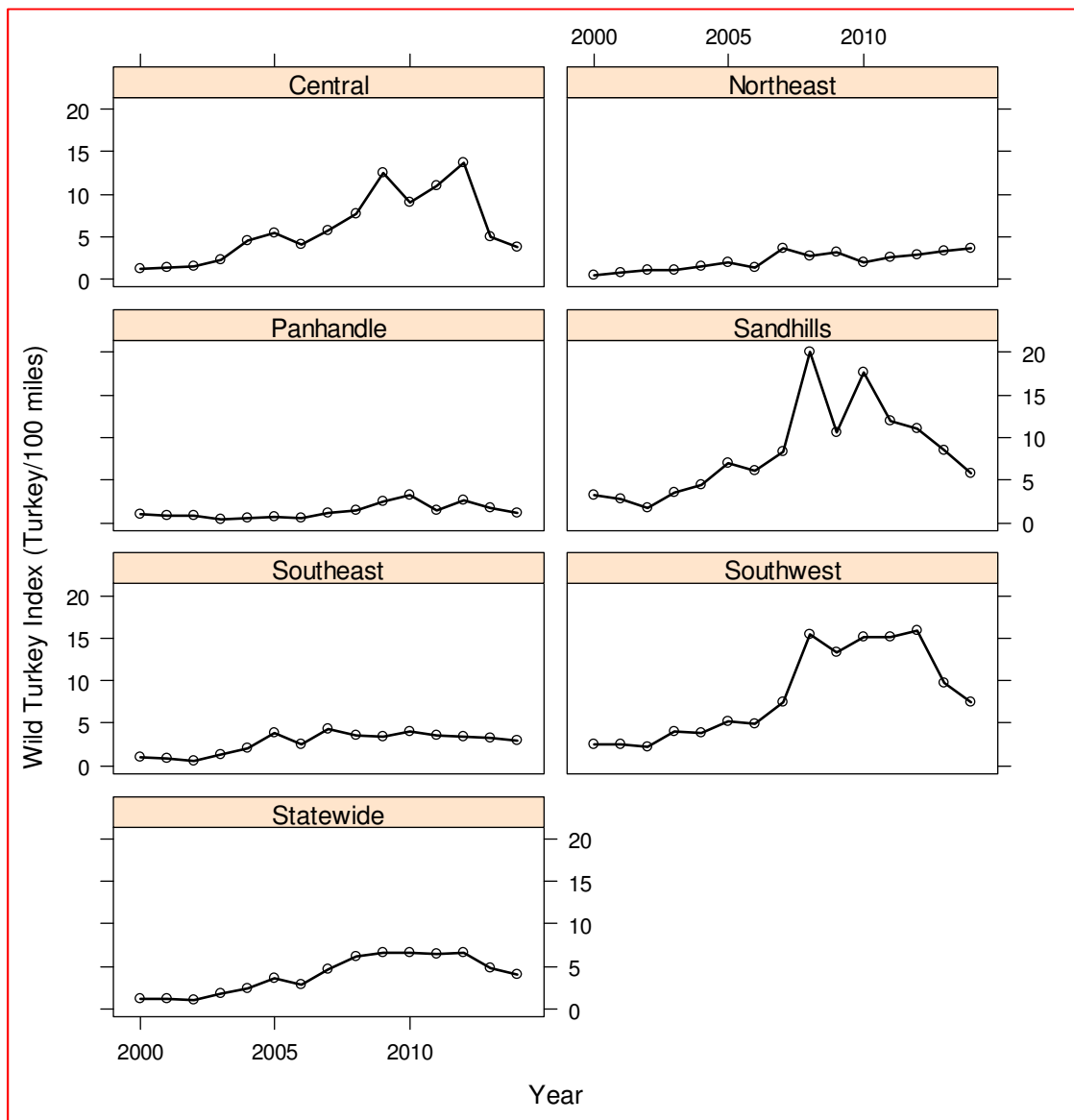
FIGURE 6. Regional and statewide time series (2000-2014) of wild turkey population indices from the April Rural Mail Carrier Survey by pheasant management region (Figure 1).

TABLE 7. Number of cards and percent of total cards (n = 448) that contained zero observations by species. Overall, 14.3% of cards contained zero counts for all species (64 cards total).

	Pheasant	Quail	Grouse	Wild Turkey	Cottontail	Jackrabbit
No of Cards	197	424	384	179	235	422
Percent	44	95	86	40	52	94